

Historic, Archive Document

Do not assume content reflects current scientific knowledge, policies, or practices.

PA 1295

The USDA Research Apprenticeship Program for High-School Youth

1
A984Pro



United States
Department of
Agriculture

PREPARED BY
Science and
Education
Administration

Program
Aid 1295

The USDA Research Apprenticeship Program for High-School Youth

Careers in the food and agricultural sciences are interesting, challenging, and rewarding.

The USDA Research Apprenticeship Program gives promising minority high school students first-hand experience in research. This program gives qualified students a chance to spend a summer working directly with established scientists in a university or Federal research facility close to the students' homes.

The Research Apprenticeship Program was developed by the White House staff, together with the Office of Management and Budget and the Office of Science and Technology Policy. Program sponsors within USDA include—

- Science and Education Administration (SEA).
- Economics and Statistics Service (ESS).
- Forest Service (FS).

The SEA Office of Higher Education administers the program.

The main purpose of the program is to stimulate interest in careers in science and engineering among racial and ethnic minorities, who are underrepresented in the food and agricultural sciences, as in other scientific fields.

Under the program, high school students can learn about research by working with scientists in university and Federal facilities. For a summer's work, apprentices receive stipends roughly equivalent to what would be earned at the minimum wage.

The USDA Research Apprenticeship Program was launched in 1980 in 31 States and the District of Columbia. Participating were 69 institutions, 167 apprentices, and 167 scientists. The ethnic backgrounds of students participating in the first year of the program are shown in the graph.

Activities of Apprentices

Apprentices participate in exciting research projects. Here are some examples of students' activities in 1980:

- At the U.S. Salinity Laboratory, SEA, in Riverside, Calif., the apprentice was involved in studies on the genetic aspects of salt tolerance of plants. He worked in the field, greenhouse, and laboratory. Laboratory procedures included sample extraction, filtration, hydrolysis, and analysis. In the greenhouse, the apprentice learned scientific methods of designing experiments and collecting data. The apprentice also learned about different plant breeding systems.
- At the field office of the Natural Resources Economics Division, ESS, at Ft. Collins, Colo., apprentices worked on a project to develop data bases and perform analyses of nationwide coal resources. This effort includes the development of comprehensive information on coal reserves, mining, preparation, transportation, and utilization. Data were entered into a computer and programs were written for the computer to process data files and produce printed reports. Such information will facilitate future decisions regarding this important natural resource.
- At the University of Georgia Agricultural Experiment Station in Experiment, Ga., the Department of Food Science conducts research on the safekeeping and processing of foods from harvest to consumption. The research apprentice participated in a project in which dried foods were disinfested of insects by solar energy. The apprentice helped construct a solar dryer in which peaches were dried. Peaches were artificially infested with the Indian meal moth to determine the effectiveness of solar disinfestation. The apprentice learned the application of physical principles to practical problems of food safety.
- At the SEA Ruminant Nutrition Laboratory at the Beltsville Agricultural Research Center in Beltsville, Md., scientists conduct nutritional and biochemical research with beef cattle, dairy cattle, and sheep. The objective is to increase production in those animals. The apprentice helped to collect blood samples from calves and sheep. He took part in the analysis of blood samples for sulfur content.
- At the North Central Forest Experiment Station at St. Paul, Minn., research is underway to identify, understand, and control forest tree diseases. In the laboratory, the apprentice participated in a project concerned with differentiating between two fungus strains. She helped

take field measurements and samples from diseased poplar trees. Working in several tree nurseries, the apprentice helped evaluate disease infection and take soil and seedling samples.

- At Lincoln University in Jefferson City, Mo., human nutritionists are studying the nutritional aspects of diabetes. Apprentices performed laboratory analyses of blood and hair samples to determine zinc levels. The apprentices also learned about nutritional problems associated with hypertension.

In this program, apprentices develop specific scientific skills, including the following typical examples:

- Familiarity with a wide array of laboratory instrumentation, ranging in complexity from the analytical balance to the scanning electron microscope.
- Knowledge of proper care of experimental materials, such as laboratory animals and plants.
- Performance of experimental surgery on animals and injection of biological compounds.
- Statistical analysis of data to determine whether the results are caused by the experimental treatments rather than by chance.
- Scientific writing, occasionally with the possibility of achieving coauthorship of formal publications or oral presentations of research results at scientific meetings.

In addition to participating in a specific research situation, apprentices are frequently given the opportunity to visit other laboratories within the sponsoring institution. Such visits permit interaction with an array of scientists and provide the students with an overview of diverse research areas in the food and agricultural sciences. In many cases, field trips to rural agricultural sites are conducted. The trips allow the apprentices to see practical problems and to understand how agricultural research contributes to the solution of those problems.

Who is Eligible

Prospective research apprentices must meet the following requirements:

- Interest in science as a vocation and a desire to attend college.
- Interest in the food and agricultural sciences, including biological, physical, or social sciences as a college major.
- Completion of the junior or senior year of high school.
- Rank in the upper quarter of his or her class.
- Citizenship of the United States.

Historic, Archive Document

Do not assume content reflects
scientific knowledge, policy

Information on Participation

Students, teachers, school administrators, and other interested persons may learn more about the program by contacting any of the following:

- Deans of Resident Instruction, Colleges of Agriculture, at the land-grant university in each State.
- Directors of Agricultural Experiment Stations in each State.
- Regional Administrators and Scientists, SEA-Agricultural Research, USDA:

Northeastern Region
Bldg. 003, BARC-West
Beltsville, MD 20705

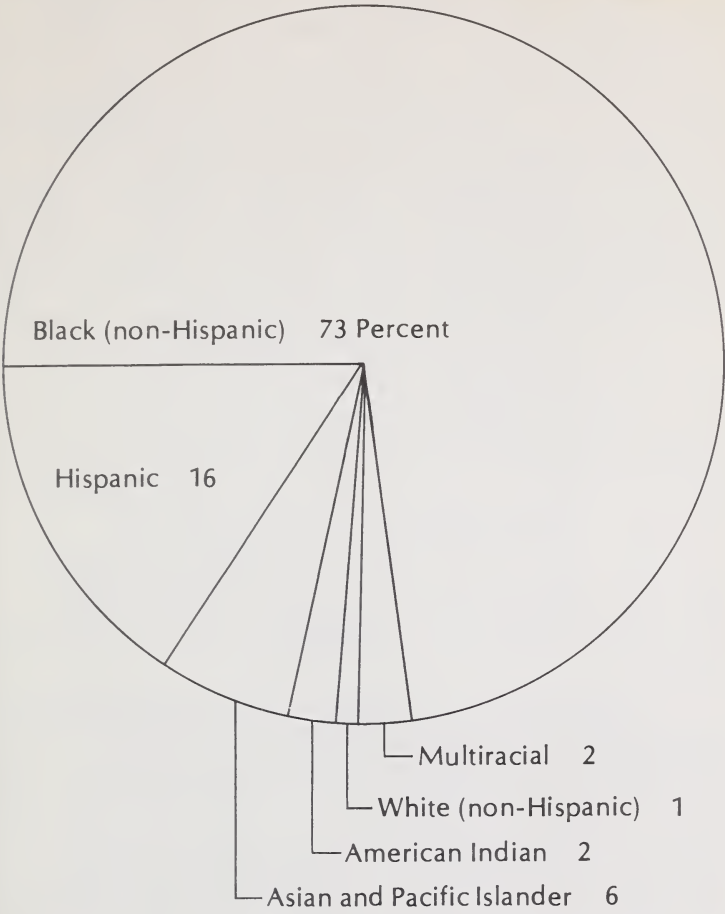
North Central Region
2000 W. Pioneer Pkwy.
Peoria, IL 61615

Southern Region
701 Loyola Ave.
P.O. Box 53326
New Orleans, LA 70153

Western Region
1333 Broadway, Suite 400
Oakland, CA 94612

- Economics and Statistics Service, USDA:
Director of Equal Opportunity
and Civil Rights
Washington, D.C. 20250.
- Forest Service, USDA:
Deputy Chief for Research
Washington, D.C. 20250.
- Science and Education Administration, USDA:
Assistant Director, Office of
Higher Education
Washington, D.C. 20250.

Distribution of Racial/Ethnic Origins of Apprentices in the 1980 USDA Research Apprenticeship Program



Eligibility for participation in all programs administered by the U.S. Department of Agriculture is established by law without regard to race, color, national origin, sex, age, religion, or handicap. If you feel you have been denied the benefits of any USDA program on any of these grounds, write directly to the Secretary of Agriculture, Washington, D.C. 20250.

